USGS
science for a changing world

Metal Industry Indicators

Composite Indexes of Leading and Coincident Indicators of Selected Metal Industries for July and August—Summary Report

September 15, 2006

The **primary metals leading index** declined 1.0% to 150.3 in August from a revised 151.8 in July, and its 6-month smoothed growth rate fell to 2.4%from a revised 5.6% in July. The 6-month smoothed growth rate is a compound annual rate that measures the near-term trend. Usually a growth rate above +1.0% signals an increase in metals activity, and a growth rate below -1.0% indicates a downturn in activity. The sharp drop in the primary metals leading index growth rate is mostly a consequence of a slowdown in the rapid growth in metals prices. The U.S. economy is still strong enough to support, at least, modest-to-moderate growth the primary metals industry in the months directly ahead.

Three of the indicators that were available for the August index calculation decreased, and one increased. The JOC-ECRI metals price index growth rate dropped in August, contributing -1.0 percentage point to the net decline in the leading index. The stock price index combining construction and farm machinery companies and industrial machinery companies decreased for the third consecutive month, contributing -0.2 percentage points. The PMI decreased slightly in August, and its contribution rounded to zero. Nevertheless, the PMI remains above the threshold that indicates increasing activity growth in the domestic manufacturing industry. In contrast, while the average workweek in primary metals establishments in August was only slightly longer, it made a 0.2-percentage-point contribution. The August leading index should be considered preliminary because only four of its eight indicators were available, and the leading index will likely be revised when the other components are added next month.

Metals are key inputs in durable goods manufacturing and construction, which account for almost a quarter of gross domestic product final sales. Therefore, the primary metals leading index also gives early signals of major changes in activity for the overall U.S. economy (Chart 8).

The primary aluminum and the aluminum mill products indexes are suspended because of discontinued availability of industry-specific historical data. The USGS will continue to calculate the steel and copper composite indexes. These indexes are available through July. The copper leading index fell 1.1% in July, and its growth rate sank into negative territory. Four of its six indicators decreased, led by a sharp decline in new housing permits issued. Cutbacks in overtime hours in copper rolling, drawing, extruding, and alloying plants

followed close behind. The S&P stock price index for building materials companies fell for the second consecutive month and the yield spread between the U.S. 10-year Treasury Note and the federal funds rate sank into negative territory. The decline in the copper leading index's growth rate would normally suggest that the domestic copper industry could experience a contraction, however, concern over copper supply will likely keep the U.S. copper industry growing at a modest pace in the months directly ahead. The steel leading index decreased 0.3% in July, with mixed movement among its nine indicators. The falling index for housing permits issued, fewer shipments of the new household appliances, and the declining growth of the steel scrap price in July had the most negative impact on the steel leading index. However, an uptick in car and light truck sales offset some of that decline. The steel leading index growth rate continues to decline and suggests slow-to-modest industry activity growth in the near future.

The **metals price leading index** decreased 0.7% in July, the latest month for which it is available, to 105.9 from a revised 106.7 in June. Its 6-month smoothed growth rate declined to -0.7% from a revised 0.6% in June. Two of its three available indicators made negative contributions to the leading index. The growth rate of the trade-weighted average exchange value of other major currencies against the U.S. dollar contributed -0.4 percentage points to the net decline in the leading index. The yield spread between the U.S. 10-year Treasury Note and the federal funds rate also contributed -0.4 percentage points. While the growth rate of the inflation-adjusted value of new orders for U.S. nonferrous metal products edged up in July, its contribution rounded to zero. The fourth component, the growth rate of the Economic Cycle Research Institute (ECRI) 18-Country Long Leading Index, was only available though June. It continued to decrease, indicating slow-to-modest growth for most global economies. The ECRI 18-Country Long Leading Index gauges future economic activity for major industrialized countries and signals changes in the growth of economic activity about 5 months in advance. The metals price leading index signals major changes in the growth rate of nonferrous metal prices an average of 8 months in advance.

The growth rate of the inflation-adjusted value of U.S. nonferrous metal products inventories, which is an indicator of supply, was virtually unchanged in July. This indicator usually moves inversely with the price of metals. The downgrades in domestic and global economic growth outlooks, along with the prospect of more metals availability will likely ease some the pressure on metals price growth.

The percent changes from June to July for the **metal industry coincident indexes**, which measure current economic activity, are shown below. July is the latest month for which these indexes are available.

Primary Metals	0.2%
Steel	0.3%
Copper	0.0%

Tables 1, 3, 5, and 7 identify the indicators and, for the industry indexes, show the contributions of each indicator to its respective index.

The *Metal Industry Indicators* report is produced at the U.S. Geological Survey by the Minerals Information Team. For more information about these indexes and the *Metal Industry Indicators* monthly report, contact Gail James (703-648-4915), (e-mail, gjames@usgs.gov) at the U.S. Geological Survey.

The *Metal Industry Indicators* summary report with indexes for August and September is scheduled for release on the World Wide Web at 10:00 a.m. EDT, Friday, October 20.

Table 1.
Leading Index of Metal Prices and Growth Rates of the Nonferrous Metals Price Index, Inventories of Nonferrous Metal Products, and Selected Metal Prices

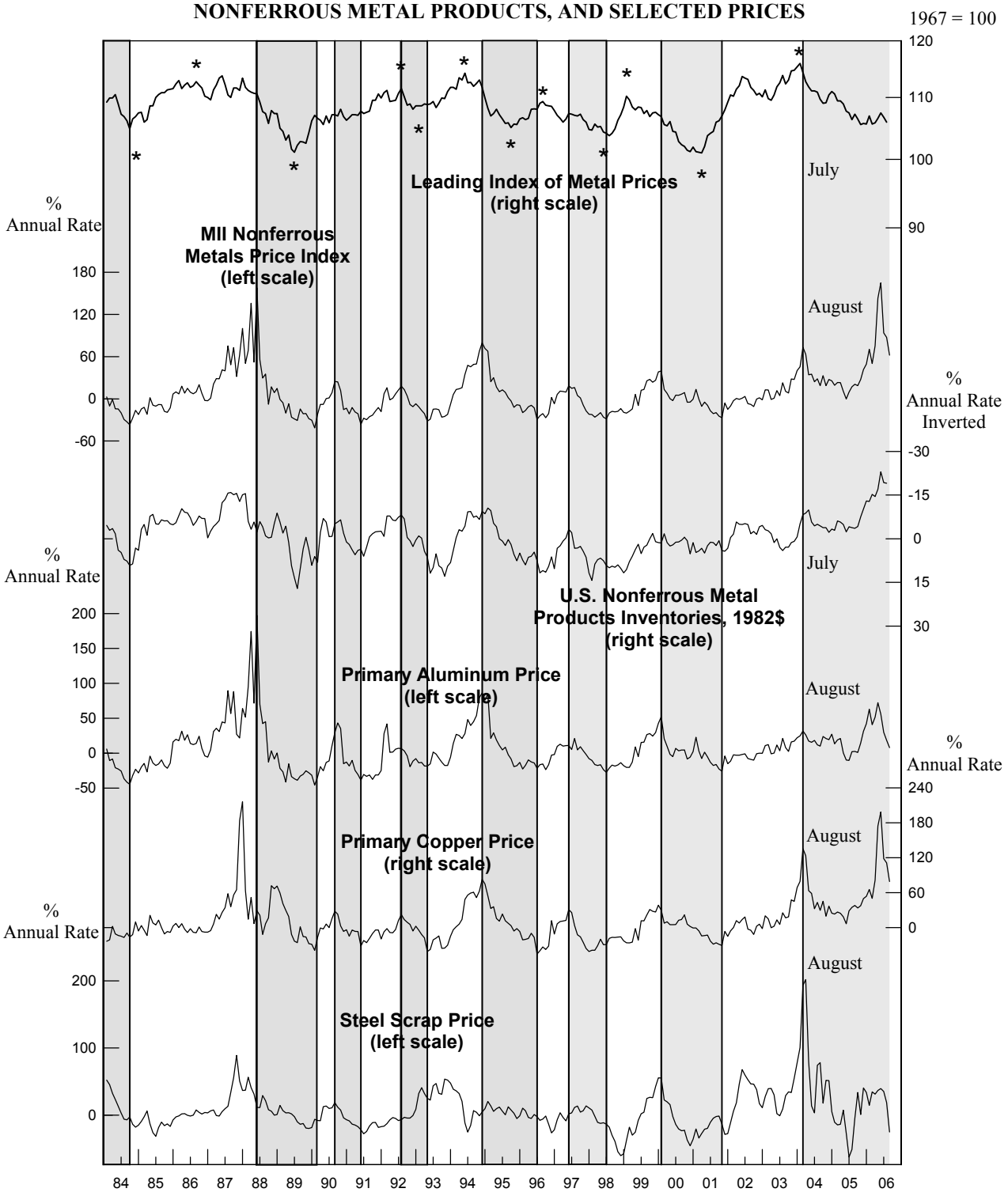
		Six-Month Smoothed Growth Rates				
	Leading Index of Metal Prices (1967=100)	MII Nonferrous Metals Price Index	U.S. Nonferrous Metal Products Inventories (1982$)	Primary Aluminum	Primary Copper	Steel Scrap
2005						
July	106.3	17.2	-3.8	2.1	34.7	-51.1
August	107.2	20.6	-3.6	2.6	38.1	-4.5
September	106.4	18.8	-4.2	0.9	33.7	33.7
October	105.5r	27.6	-7.5	14.5	37.5	1.0
November	105.7	41.6	-10.2	31.3	49.9	40.5
December	105.6	49.3	-13.0	42.1	53.7	33.8
2006						
January	106.9	70.3	-12.8	62.7	65.4	14.9
February	105.6	50.2	-15.2	40.9	50.1	34.6
March	105.8r	75.4	-14.5r	51.6	81.4	31.3
April	106.5r	143.1	-17.0	72.3	174.4	36.8
May	107.4r	164.9	-23.0	56.1	198.4	39.6
June	106.7r	93.8	-19.3r	30.0	118.4	35.5
July	105.9	87.3	-19.1	18.4	111.0	18.6
August	NA	62.0	NA	8.0	79.0	-25.0

NA: Not available **r:** Revised

Note: The components of the Leading Index of Metal Prices are the spread between the U.S. 10-year Treasury Note and the federal funds rate, and the 6-month smoothed growth rates of the deflated value of new orders for nonferrous metal products, the Economic Cycle Research Institute's 18-Country Long Leading Index, and the reciprocal of the trade-weighted average exchange value of the U.S. dollar against other major currencies. The Metal Industry Indicators (MII) Nonferrous Metals Price Index measures changes in end-of-the-month prices for primary aluminum, copper, lead, and zinc traded on the London Metal Exchange (LME). The steel scrap price used is the price of No. 1 heavy melting. Inventories consist of the deflated value of finished goods, work in progress, and raw materials for U.S.-produced nonferrous metal products (NAICS 3313, 3314, & 335929). Six-month smoothed growth rates are based on the ratio of the current month's index or price to its average over the preceding 12 months, expressed at a compound annual rate.

Sources: U.S. Geological Survey (USGS); American Metal Market (AMM); the London Metal Exchange (LME); U.S. Census Bureau; the Economic Cycle Research Institute, Inc. (ECRI); and Federal Reserve Board.

CHART 1.
LEADING INDEX OF METAL PRICES AND GROWTH RATES OF NONFERROUS METALS PRICE INDEX, INVENTORIES OF NONFERROUS METAL PRODUCTS, AND SELECTED PRICES



Shaded areas are downturns in the nonferrous metals price index growth rate. Asterisks (*) are peaks and troughs in the economic activity reflected by the leading index of metal prices. Scale for nonferrous metal products inventories is inverted.

U.S. Geological Survey, September 2006

Table 2.
The Primary Metals Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2005				
September	143.8	1.7	103.3	3.7
October	143.5	1.3	103.6	4.1
November	145.6	4.1	103.8	4.0
December	147.0	5.9	104.2	4.5
2006				
January	149.2	8.5	105.5	6.5
February	150.7	10.0	104.7	4.6
March	150.0r	8.3r	104.9r	4.4r
April	151.9r	10.1	105.2	4.3r
May	153.8r	11.3r	106.7r	6.3r
June	151.6r	6.7r	107.0r	6.0r
July	151.8r	5.6r	107.2	5.2
August	150.3	2.4	NA	NA

NA: Not available **r:** Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 3.
The Contribution of Each Primary Metals Index Component to the Percent Change in the Index from the Previous Month

Leading Index	**July**	**August**
1. Average weekly hours, primary metals (NAICS 331)	0.2r	0.2
2. Weighted S&P stock price index, machinery, construction and farm and industrial (December 30, 1994 = 100)	-0.1r	-0.2
3. Ratio of price to unit labor cost (NAICS 331)	0.2	NA
4. JOC-ECRI metals price index growth rate	0.1r	-1.0
5. New orders, primary metal products, (NAICS 331 & 335929) 1982$	-0.1	NA
6. Index of new private housing units authorized by permit	-0.3	NA
7. Growth rate of U.S. M2 money supply, 2000$	-0.1	NA
8. PMI	0.1r	0.0
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.0r	-1.0

Coincident Index	**June**	**July**
1. Industrial production index, primary metals (NAICS 331)	0.1r	0.0
2. Total employee hours, primary metals (NAICS 331)	0.2	0.1
3. Value of shipments, primary metals products, (NAICS 331 & 335929) 1982$	0.0r	-0.1
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.4r	0.1

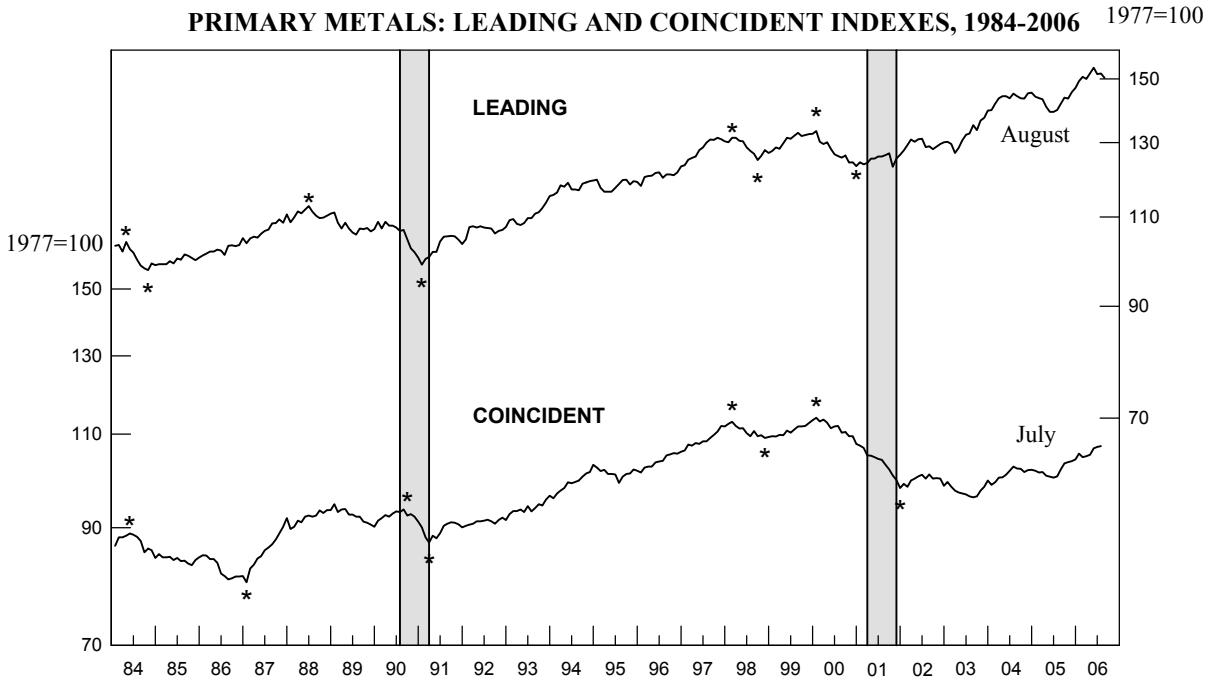
Sources: Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's and U.S. Geological Survey; 3, U.S. Geological Survey; 4, Journal of Commerce and Economic Cycle Research Institute, Inc.; 5, U.S. Census Bureau and U.S. Geological Survey; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 8, Institute for Supply Management. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics and U.S. Geological Survey; 3, U.S. Census Bureau and U.S. Geological Survey. All series are seasonally adjusted, except 2, 3, and 4 of the leading index.

NA: Not available **r:** Revised

Note: A component's contribution, shown in Tables 3, 5, 7, and 9, measures its effect, in percentage points, on the percent change in the index. Each month, the sum of the contributions plus the trend adjustment equals (except for rounding differences) the index's percent change from the previous month.

CHART 2.

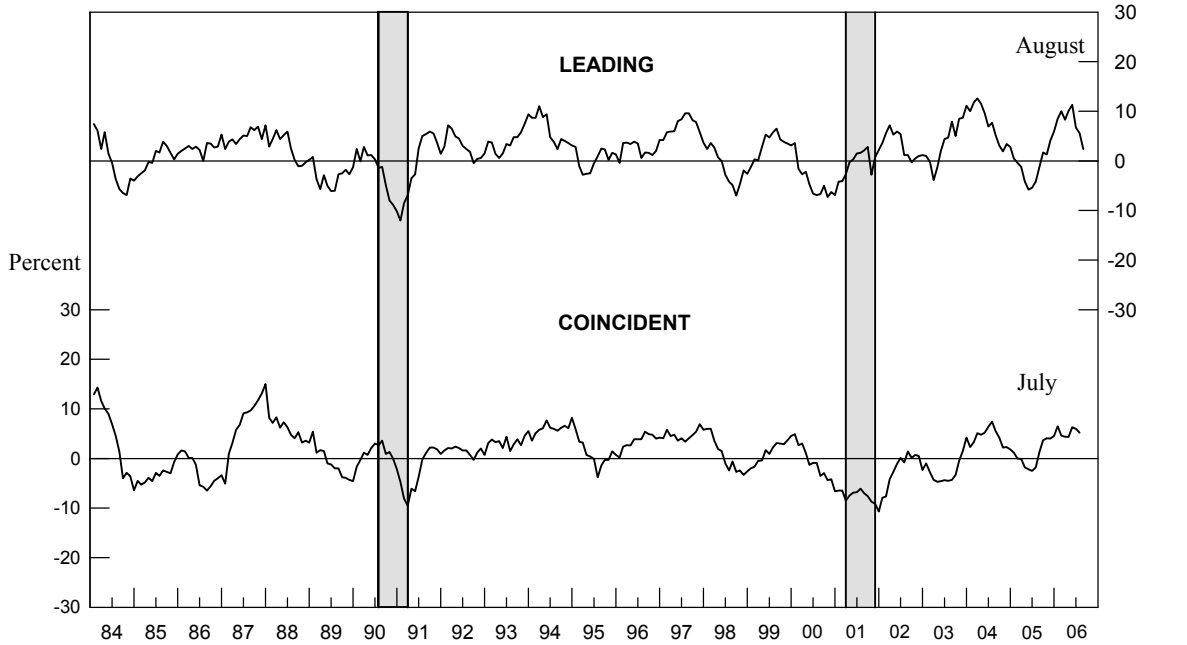
PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1984-2006



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 3.

PRIMARY METALS: LEADING AND COINCIDENT GROWTH RATES, 1984-2006



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

Table 4.
The Steel Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2005				
August	114.8	-2.1	95.7	-1.8
September	116.5	1.0	96.1	-0.9
October	116.3	0.8	97.0	1.1
November	118.9	4.9	97.6	2.3
December	120.0	6.6	98.9	4.9
2006				
January	121.3	8.5	99.1	5.0
February	121.1	7.7	98.5	3.8
March	121.2	7.3	98.1r	2.7r
April	121.9	7.7	97.7	1.8r
May	120.6	4.6	98.4r	2.9r
June	119.8r	2.3r	98.4r	2.3r
July	119.5	0.9	98.7	2.4

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 5.
The Contribution of Each Steel Index Component to the Percent Change in the Index from the Previous Month

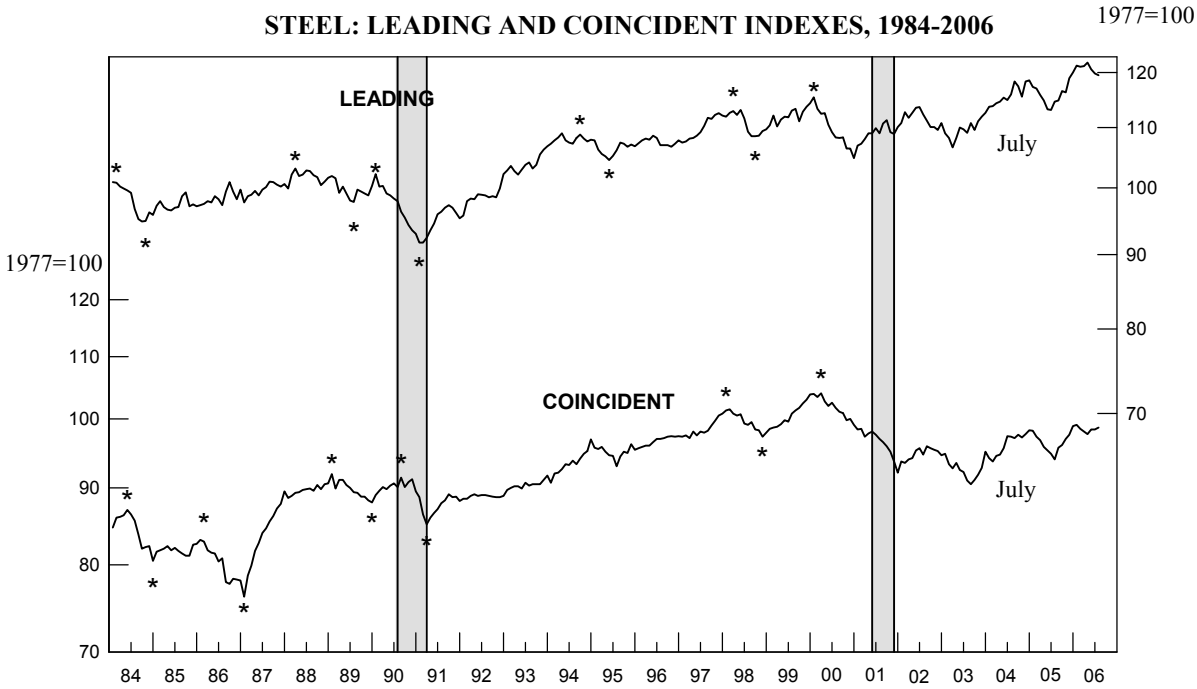
	June	July
Leading Index		
1. Average weekly hours, iron and steel mills (NAICS 3311 & 3312)	-0.1	0.1
2. New orders, iron and steel mills (NAICS 3311 & 3312), 1982$	-0.1r	-0.1
3. Shipments of household appliances, 1982$	0.0r	-0.2
4. S&P stock price index, steel companies	-0.5	0.1
5. Retail sales of U.S. passenger cars and light trucks (units)	0.0	0.2
6. Growth rate of the price of steel scrap (#1 heavy melting, $/ton)	0.0	-0.2
7. Index of new private housing units authorized by permit	-0.2	-0.3
8. Growth rate of U.S. M2 money supply, 2000$	0.2	-0.1
9. PMI	-0.1	0.1
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-0.6	-0.4
Coincident Index		
1. Industrial production index, iron and steel products (NAICS 3311 & 3312)	0.0r	0.0
2. Value of shipments, iron and steel mills (NAICS 3311 & 3312), 1982$	-0.1r	0.1
3. Total employee hours, iron and steel mills (NAICS 3311 & 3312)	-0.1	0.2
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.1r	0.4

Sources: Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, U.S. Census Bureau and U.S. Geological Survey; 4, Standard & Poor's; 5, U.S. Bureau of Economic Analysis and American Automobile Manufacturers Association; 6, Journal of Commerce and U.S. Geological Survey; 7, U.S. Census Bureau and U.S. Geological Survey; 8, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 9, Institute for Supply Management. Coincident: 1, Federal Reserve Board; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Bureau of Labor Statistics and U.S. Geological Survey. All series are seasonally adjusted, except 4 and 6 of the leading index.

r: Revised

CHART 4.

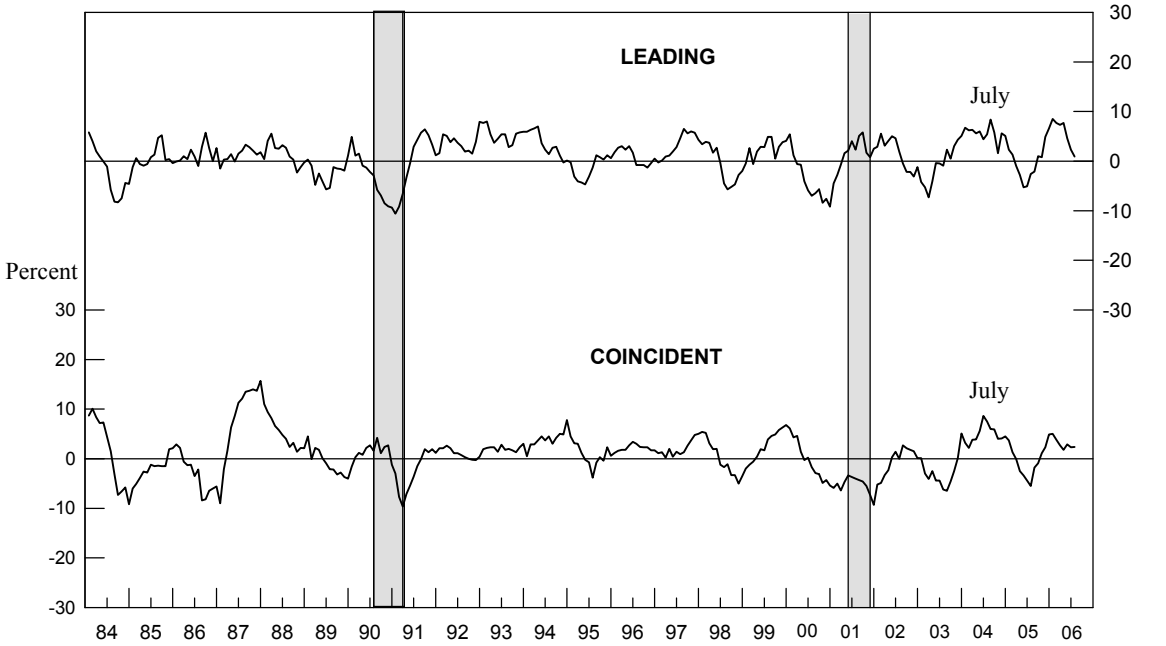
STEEL: LEADING AND COINCIDENT INDEXES, 1984-2006



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 5.

STEEL: LEADING AND COINCIDENT GROWTH RATES, 1984-2006



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

Table 6.
The Copper Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2005				
August	128.7	1.1	110.2	1.8
September	129.1	1.5r	109.8	0.9
October	128.1	-0.1	110.1	1.0
November	128.8	0.8	109.9	0.3
December	127.8	-0.8	109.5	-0.8
2006				
January	127.9	-0.6	110.8	1.4
February	126.9	-2.0	111.8	2.9
March	128.6r	0.6r	112.3	3.4
April	129.7	2.3	110.3r	-0.1r
May	132.0	5.5r	113.1r	4.4r
June	129.3r	0.9r	113.9r	5.2r
August	127.9	-1.2	113.9	4.7

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

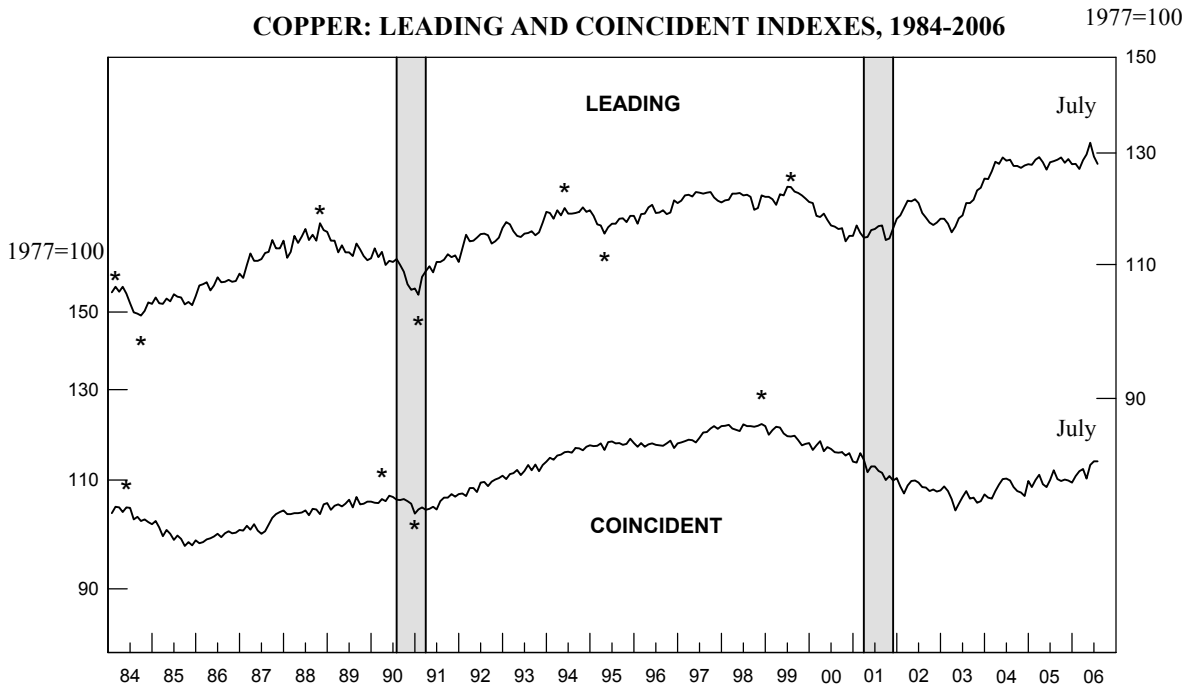
Table 7.
The Contribution of Each Copper Index Component to the Percent Change in the Index from the Previous Month

Leading Index	**June**	**July**
1. Average weekly overtime hours, copper rolling, drawing, extruding, and alloying (NAICS 33142)	-0.7r	-0.4
2. New orders, nonferrous metal products, (NAICS 3313, 3314, & 335929) 1982$	0.0	0.0
3. S&P stock price index, building products companies	-0.6	-0.3
4. LME spot price of primary copper	-0.5	0.3
5. Index of new private housing units authorized by permit	-0.3	-0.4
6. Spread between the U.S. 10-year Treasury Note and the federal funds rate	-0.1r	-0.2
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-2.2	-1.0
Coincident Index		
1. Industrial production index, primary smelting and refining of copper (NAICS 331411)	-0.2r	-0.2
2. Total employee hours, copper rolling, drawing, extruding, and alloying (NAICS 33142)	0.8r	0.1
3. Copper refiners' shipments (short tons)	NA	NA
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.7r	0.0

Sources: Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Standard & Poor's; 4, London Metal Exchange; 5, U.S. Census Bureau and U.S. Geological Survey; 6, Federal Reserve Board and U.S. Geological Survey. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics; 3, American Bureau of Metal Statistics, Inc. and U.S. Geological Survey. All series are seasonally adjusted, except 3, 4, and 6 of the leading index.

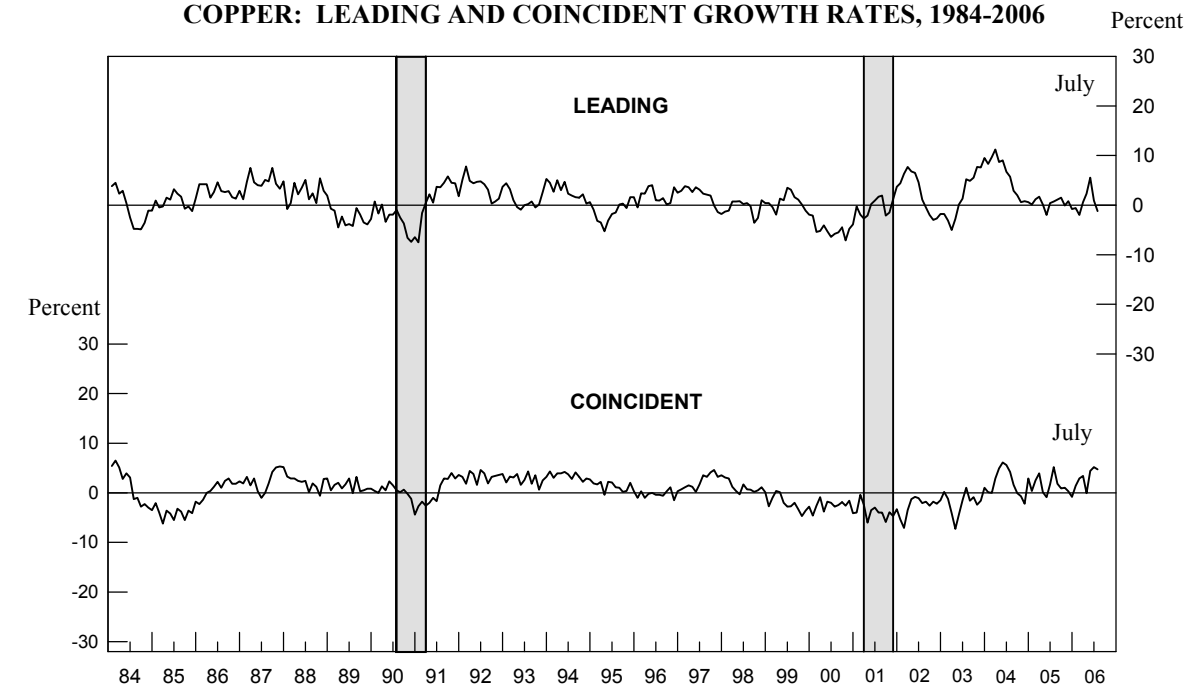
r: Revised NA: Not available

CHART 6.
COPPER: LEADING AND COINCIDENT INDEXES, 1984-2006



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 7.
COPPER: LEADING AND COINCIDENT GROWTH RATES, 1984-2006

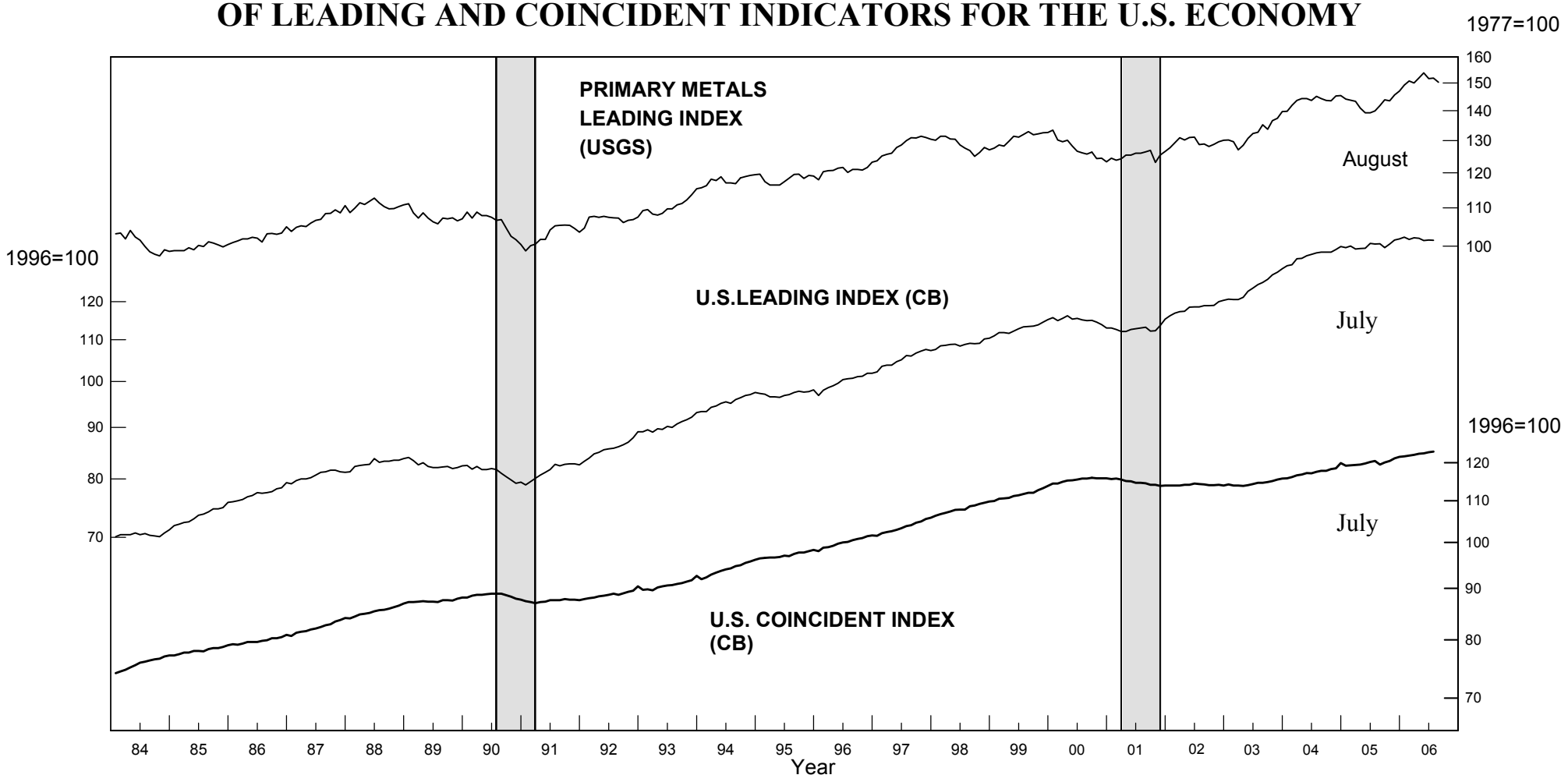


Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

Chart 8.

PRIMARY METALS LEADING INDEX AND COMPOSITE INDEXES OF LEADING AND COINCIDENT INDICATORS FOR THE U.S. ECONOMY



Shaded areas are business cycle recessions.

Sources: U.S. Geological Survey (USGS) and Conference Board (CB).

September 2006